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David M. Carrel

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EXAMINER

MATTIS, JASON E

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,506

Applicant(s)

CARREL ET AL.

Examiner

Jason E. Mattis

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed 8/11/06. Claims 1-37 are currently pending in the application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-2, 8-9, 18, 24-25, and 35-36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states, "...determining a layer 2 multicast channel from a layer 3 multicast channel." It is not clear from the claims or the specification what is meant by this. The specification describes using a layer 3 multicast address to create a layer 2 multicast address; however, an address is not the same as a channel. For the purposes of examination, it is assumed that "determining a layer 2 multicast channel from a layer 3 multicast channel" mean determining a layer 2 multicast address from a layer 3 multicast address. It is recommended that claim 1 be amended to more clearly claim the subject matter disclosed in the specification. Claims 7, 13, 21, 28, and 34 contain similar language and also need to be amended.

Claim 2 states, "...wherein the layer 2 multicast channel is an Ethernet MAC address and the layer 3 multicast channel is an IP address." Addresses may be used as an identifier for a channel, but addresses are not channels. It is recommended that the claim be amended to state, "...wherein the layer 2 multicast channel is **identified by** an Ethernet MAC address and the layer 3 multicast channel is **identified by** an IP address." Claims 8-9, 18, 24-25, and 35-36 all contain limitations similar to the limitations of claim 2 and should be amended accordingly.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-10, and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. "Practical Multicasting on a Nonbroadcast Subnetwork" in view of Araujo et al. (U.S. Pat. 6118785) and in further view of Owens et al. (U.S. Pat. 6977906).

With respect to claim 1, Walton et al. discloses a computer implemented method (**See the abstract and section 5.3 of Walton et al. for reference to a**

computer implemented method of extending a layer 2 point-to-point protocol to allow multicast communications). Walton et al. also discloses determining a layer 2 multicast channel from a layer 3 multicast channel, notifying the client of the layer 2 multicast channel, receiving a packet, encapsulating the packet indicating the layer 2 multicast channel in the encapsulation, and transmitting the encapsulated packet (**See sections 4.1 and 5.1 of Walton et al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address in the encapsulation to transmit the packet**). Walton et al. does not specifically disclose determining a client to be multicast capable.

With respect to claim 1, Araujo et al., in the field of communications, discloses determining a client to be multicast capable (**See column 15 lines 3-13 of Araujo et al. for reference to determining that a point-to-point protocol client is multicast capable by receiving IGMP and RSVP frames requesting a multicast session from an end station**). Determining a client to be multicast capable has the advantage of allowing multicast capable clients to be recognized such that they are allowed to join multicast data sessions, which reduce the amount of messages that need to be sent through the network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Araujo et al., to combine determining a client to be multicast capable, as suggested by Araujo et al., with the system and method of

Walton et al., with the motivation being to allow multicast capable clients to be recognized such that they are allowed to join multicast data session, which reduce the amount of messages that need to be sent through the network.

With respect to claim 1, although Walton et al. does disclose using Myrinet, which is a layer 2 protocol, and although Araujo et al. does discloses using point-to-point protocol, the combination of Walton et al. and Araujo et al. does not disclose using point-to-point over Ethernet protocol.

With respect to claim 3, although Araujo et al. does disclose sending session request including tags indicating multicast session request (**See column 15 lines 3-13 of Araujo et al.**), the combination of Walton et al. and Araujo et al. does not disclose receiving a session request message including a tag indicating a PPPoE multicast capabilities.

With respect to claims 1 and 3, Owens et al., in the field of communications, discloses using point-to-point over Ethernet protocol and sending session request messages including a tag indication capabilities (**See column 8 line 61 to column 9 line 36 of Owens et al. for reference to using PPPoE, and for reference to sending PADR session request messages including tags indicating capabilities and session types**). Using PPPoE has the advantage of providing a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Owens et al., to combine using PPPoE, as suggested by Owens et al., with the system and method of Walton et al. and Araujo et

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al., with the motivation being to provide a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

With respect to claim 2, Walton et al. discloses that the layer 2 address is a MAC address and the layer 3 address is an IP address **(See section 5.1 of Walton et al. for reference to determining a Myrinet cycle number, which is a layer 2 MAC address, from an IP address)**.

With respect to claim 4, Walton et al. discloses that the traffic identifies a multicast session identifier a layer 2 multicast channel **(See section 5.1 of Walton et al. for reference to using distinct multicast cycle numbers to identify a multicast session as well as a layer 2 multicast channel)**.

With respect to claim 5, Walton et al. discloses listening for multicast traffic on the layer 2 multicast channel **(See section 5.4 of Walton et al. for reference to listening for multicast traffic)**.

With respect to claim 6, Walton et al. discloses decapsulating multicast traffic if the client is listening on the multicast traffic channel **(See sections 4.1-5.1 and 5.4 of Walton et al. for reference setting up multicast session and processing data in the multicast session which inherently must include decapsulating multicast traffic that is received such that it may be processed for routing)**.

With respect to claim 7, Walton et al. discloses a computer implement method **(See the abstract and section 5.3 of Walton et al. for reference to a computer implemented method of extending a layer 2 point-to-point protocol to allow multicast communications)**. Walton et al. also discloses translating a layer 3

multicast channel to a layer 2 multicast channel, receiving a packet, encapsulating the packet indicating the layer 2 multicast channel in the encapsulation, and transmitting the encapsulated packet **(See sections 4.1 and 5.1 of Walton et al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address in the encapsulation to transmit the packet)**. Walton et al. further discloses decapsulating the multicast packet when the layer 2 multicast channel is the desired layer 2 multicast channel **(See section 5.1 of Walton et al. for reference to filtering and not decapsulating multicast packets that are not destined for an application at the host)**. Walton et al. does not specifically disclose indicating a PPP multicast session identifier in the encapsulation.

With respect to claim 7, Araujo et al., in the field of communications, discloses indicating a PPP multicast session identifier **(See column 15 lines 3-13 of Araujo et al. for reference to indicating a point-to-point protocol multicast session identifier by sending IGMP and RSVP frames requesting a multicast session from an end station)**. Indicating a PPP multicast session identifier has the advantage of allowing multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Araujo et al., to combine indicating a PPP multicast session identifier, as suggested by Araujo et al., with the system and method

of Walton et al., with the motivation being to allow multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

With respect to claim 7, although Walton et al. does disclose using Myrinet, which is a layer 2 protocol, and although Araujo et al. does disclose using point-to-point protocol, the combination of Walton et al. and Araujo et al. does not disclose using point-to-point over Ethernet protocol.

With respect to claim 7, Owens et al., in the field of communications, discloses using point-to-point over Ethernet protocol and sending session request messages including a tag indication capabilities (**See column 8 line 61 to column 9 line 36 of Owens et al. for reference to using PPPoE, and for reference to sending PADR session request messages including tags indicating capabilities and session types**). Using PPPoE has the advantage of providing a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Owens et al., to combine using PPPoE, as suggested by Owens et al., with the system and method of Walton et al. and Araujo et al., with the motivation being to provide a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

With respect to claims 8 and 9, Walton et al. discloses that the layer 2 address is a MAC address and the layer 3 address is an IP address (**See section 5.1 of Walton et al. for reference to determining a Myrinet cycle number, which is a layer 2 MAC address, from an IP address**).

With respect to claim 10, Walton et al. discloses that the session identifier is a reserved session identifier **(See section 5.1 of Walton et al. for reference to the cycles numbers 0-255 being cycle numbers that are reserved for multicast)**.

With respect to claim 34, Walton et al. discloses a machine-readable medium that provides instructions, which when executed by a set of one or more processors, cause the processors to perform operations **(See the abstract and section 5.3 of Walton et al. for reference to a computer software implemented method of extending a layer 2 point-to-point protocol to allow multicast communications)**.

Walton et al. also discloses generating a layer 2 multicast address from a layer 3 multicast address, receiving a multicast packet for the layer 3 multicast channel, encapsulating the packet indicating the layer 2 multicast channel and multicast session identifier, and transmitting the multicast packet **(See sections 4.1 and 5.1 of Walton et al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address and session identifier in the encapsulation to transmit the packet)**.

Walton et al. does not specifically disclose indicating a PPP multicast session identifier in the encapsulation.

With respect to claim 34, Araujo et al., in the field of communications, discloses indicating a PPP multicast session identifier **(See column 15 lines 3-13 of Araujo et al. for reference to indicating a point-to-point protocol multicast session identifier by sending IGMP and RSVP frames requesting a multicast session from an end**

station). Indicating a PPP multicast session identifier has the advantage of allowing multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Araujo et al., to combine indicating a PPP multicast session identifier, as suggested by Araujo et al., with the system and method of Walton et al., with the motivation being to allow multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

With respect to claim 34, although Walton et al. does disclose using Myrinet, which is a layer 2 protocol, and although Araujo et al. does disclose using point-to-point protocol, the combination of Walton et al. and Araujo et al. does not disclose using point-to-point over Ethernet protocol.

With respect to claim 34, Owens et al., in the field of communications, discloses using point-to-point over Ethernet protocol and sending session request messages including a tag indication capabilities (**See column 8 line 61 to column 9 line 36 of Owens et al. for reference to using PPPoE, and for reference to sending PADR session request messages including tags indicating capabilities and session types**). Using PPPoE has the advantage of providing a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Owens et al., to combine using PPPoE, as suggested by Owens et al., with the system and method of Walton et al. and Araujo et

al., with the motivation being to provide a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

With respect to claims 35 and 36, Walton et al. discloses that the layer 2 address is a MAC address and the layer 3 address is an IP address **(See section 5.1 of Walton et al. for reference to determining a Myrinet cycle number, which is a layer 2 MAC address, from an IP address)**.

With respect to claim 37, Walton et al. discloses that the session identifier is a reserved session identifier **(See section 5.1 of Walton et al. for reference to the cycles numbers 0-255 being cycle numbers that are reserved for multicast)**.

2. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. in view of Araujo et al. and Owens et al. and in further view of Unitt et al. (U.S. Publication US 2004/0240466A1).

With respect to claims 11-12, the combination of Walton et al., Araujo et al., and Owens et al. does not specifically disclose that the multicast packets are video packets and collaboration application packets.

With respect to claims 11-12, Unitt et al., in the field of communications, discloses multicast Ethernet packets that are video packets and collaboration application packets **(See page 3 paragraph 44 and page 5 paragraph 98 of Unitt et al. for reference to streaming video packets and for reference to streaming other types of multicast services including applications)**. Multicasting Ethernet packets that are video packets and collaboration application packets has the advantage of

allowing multiple users to view the same video or work on the same application at the same time in real time.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Unitt et al., to combine multicasting Ethernet packets that are video packets and collaboration application packets, as suggested by Unitt et al., with the system and method of Walton et al., Araujo et al., and Owens et al., with the motivation being to allow multiple users to view the same video or work on the same application at the same time in real time.

3. Claims 13-16, 21, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. in view of the Applicant's admitted prior art, Araujo et al., and Owens et al.

With respect to claim 13, Walton et al. discloses a network element comprising a control engine to host a process and to translate a layer 3 multicast address to a layer 2 multicast address **(See the abstract and sections 5.1 and 5.3 of Walton et al. for reference a network element having software to translate an IP address, which is a layer 3 address to a Myrinet cycle number, which is a layer 2 multicast address)**. Walton et al. also discloses receiving a multicast packet, encapsulating the multicast packet indicating the layer 2 multicast channel and session identifier in the encapsulation and transmitting the encapsulated packet **(See sections 4.1 and 5.1 of Walton et al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet**

multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address and session identifier in the encapsulation to transmit the packet). Walton et al. does not disclose receiving a packet with a delivery protocol and decapsulating the packet from the deliver protocol.

With respect to claim 21, Walton et al. discloses a system comprising a network element to transmit notification of a multicast, translate the multicast's layer 3 address to a layer 2 address, encapsulate traffic indicating a multicast session identifier and the layer 2 multicast channel **(See sections 4.1 and 5.1 of Walton et al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address in the encapsulation to transmit the packet).** Walton et al. also discloses decapsulating multicast traffic if the client is listening on the multicast traffic channel **(See sections 4.1-5.1 and 5.4 of Walton et al. for reference setting up multicast session and processing data in the multicast session which inherently must include decapsulating multicast traffic that is received such that it may be processed for routing).** Walton et al. does not disclose further encapsulating traffic using a second delivery protocol and decapsulating traffic from the second deliver protocol upon reception.

With respect to claim 27, Walton et al. discloses a bridge coupled with the network element to receiving multicast traffic **(See section 5.3 of Walton et al. for reference to routers, which are bridges connected to the hosts).** Walton et al. does

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not disclose encapsulating the traffic with a second delivery protocol and transmitting the further encapsulated traffic.

With respect to claims 13, 21, and 27, the Applicant's admitted prior art discloses using a delivery protocol to encapsulate a packet and decapsulating the packet from the deliver protocol (**See page 4 paragraph 9 of the Applicant's Background of the invention section for reference to using a delivery protocol**).

Using a delivery protocol has the advantage of allowing the protocol of the core network to be different than the protocol of the edge networks such that traffic may be more quickly and efficiently routed through the core network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the Applicant's admitted prior art, to combine using a delivery protocol, as suggested by the Applicant's admitted prior art, with the system and method of Walton et al., with the motivation being to allow the protocol of the core network to be different than the protocol of the edge networks such that traffic may be more quickly and efficiently routed through the core network.

With respect to claims 13 and 21, Walton et al. does not specifically disclose indicating a PPP multicast session identifier in the encapsulation.

With respect to claims 13 and 21, Araujo et al., in the field of communications, discloses indicating a PPP multicast session identifier (**See column 15 lines 3-13 of Araujo et al. for reference to indicating a point-to-point protocol multicast session identifier by sending IGMP and RSVP frames requesting a multicast session from an end station**). Indicating a PPP multicast session identifier has the advantage of

allowing multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Araujo et al., to combine indicating a PPP multicast session identifier, as suggested by Araujo et al., with the system and method of Walton et al. and the Applicant's admitted prior art, with the motivation being to allow multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

With respect to claims 13 and 21, although Walton et al. does disclose using Myrinet, which is a layer 2 protocol, and although Araujo et al. does disclose using point-to-point protocol, the combination of Walton et al. and Araujo et al. does not disclose using point-to-point over Ethernet protocol.

With respect to claims 13 and 21, Owens et al., in the field of communications, discloses using point-to-point over Ethernet protocol and sending session request messages including a tag indication capabilities (**See column 8 line 61 to column 9 line 36 of Owens et al. for reference to using PPPoE, and for reference to sending PADR session request messages including tags indicating capabilities and session types**). Using PPPoE has the advantage of providing a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Owens et al., to combine using PPPoE, as suggested by Owens et al., with the system and method of Walton et al., the Applicant's

admitted prior art, and Araujo et al., with the motivation being to provide a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

With respect to claims 14 and 15, Walton et al. discloses that the control engine and forwarding engine comprise a set of one or more processors and a memory (See section 5.3 of Walton et al. for reference to the system being implementing using software stored in memory and executed by a processor).

With respect to claim 16, Walton et al. discloses using ATM as a delivery protocol (See section 5.3 of Walton et al. for reference to using ATM as a delivery protocol).

With respect to claims 24 and 25, Walton et al. discloses that the layer 2 address is a MAC address and the layer 3 address is an IP address (See section 5.1 of Walton et al. for reference to determining a Myrinet cycle number, which is a layer 2 MAC address, from an IP address).

With respect to claim 26, Walton et al. discloses that the session identifier is a reserved session identifier (See section 5.1 of Walton et al. for reference to the cycles numbers 0-255 being cycle numbers that are reserved for multicast).

4. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. in view of Araujo et al. and Owens et al., and in further view of O'Dell et al.

With respect to claim 17, Walton et al. discloses an apparatus comprising a module to indicate a layer 2 multicast channel, receiving multicast traffic, decapsulate the traffic, and a processor to process to traffic (See sections 4.1 and 5.1 of Walton et

al. for reference to receiving packets that are then encapsulated by translating an IP multicast address, which is a layer 3 address, into a Myrinet multicast cycle number, which is a layer 2 address, and using the multicast cycle number as the address in the encapsulation to transmit the packet, which is decapsulated and process at the receiving end). Walton et al. does not specifically disclose indicating a PPP multicast session identifier in the encapsulation.

With respect to claim 17, Araujo et al., in the field of communications, discloses indicating a PPP multicast session identifier (See column 15 lines 3-13 of Araujo et al. for reference to indicating a point-to-point protocol multicast session identifier by sending IGMP and RSVP frames requesting a multicast session from an end station). Indicating a PPP multicast session identifier has the advantage of allowing multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Araujo et al., to combine indicating a PPP multicast session identifier, as suggested by Araujo et al., with the system and method of Walton et al., with the motivation being to allow multicast sessions to be set up such that they reduce the amount of messages that need to be sent through the network.

With respect to claim 17, although Walton et al. does disclose using Myrinet, which is a layer 2 protocol, and although Araujo et al. does discloses using point-to-point protocol, the combination of Walton et al. and Araujo et al. does not disclose using point-to-point over Ethernet protocol.

With respect to claim 17, Owens et al., in the field of communications, discloses using point-to-point over Ethernet protocol and sending session request messages including a tag indication capabilities (**See column 8 line 61 to column 9 line 36 of Owens et al. for reference to using PPPoE, and for reference to sending PADR session request messages including tags indicating capabilities and session types**). Using PPPoE has the advantage of providing a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Owens et al., to combine using PPPoE, as suggested by Owens et al., with the system and method of Walton et al. and Araujo et al., with the motivation being to provide a simple protocol that allows for the multiplexing of many network singles into a single tunnel.

With respect to claim 17, Walton et al. does not disclose a network interface card.

With respect to claim 17, O'Dell et al., in the field of communications, discloses an apparatus including a network interface card and a PPPoE module (**See column 5 lines 34-53 and column 6 lines 9-20 of O'Dell et al. for reference to using an Ethernet Network Interface Card and a PPPoE client software loaded on a processor**). Using a network interface card and a PPPoE module has the advantage of allowing standard network interface cards to be used in the PPPoE multicasting system while providing the PPPoE multicasting functionality in separate software included in the PPPoE module.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of O'Dell et al., to combine using a network interface card and a PPPoE module, as suggested by O'Dell et al., with the system and method of Walton et al., Araujo et al., and Owens et al., with the motivation being to allow standard network interface cards to be used in the PPPoE multicasting system while providing the PPPoE multicasting functionality in separate software included in the PPPoE module.

With respect to claim 18, Walton et al. discloses that the layer 2 address is a MAC address (See section 5.1 of Walton et al. for reference to determining a Myrinet cycle number, which is a layer 2 MAC address, from an IP address).

5. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. in view of Araujo et al., Owens et al., O'Dell et al., and in further view of Unitt et al.

With respect to claims 19-20, the combination of Walton et al., Araujo et al., Owens et al., and O'Dell et al. does not specifically disclose the multicast packets are video packets, collaboration application packets, audio packets, and ticker data packets.

With respect to claims 19-20, Unitt et al., in the field of communications, discloses multicast Ethernet packets that are video packets, collaboration application packets, audio packets, and ticker data packets (See page 3 paragraph 44 and page 5 paragraph 98 of Unitt et al. for reference to streaming video packets and for reference to streaming other types of multicast services including applications,

audio, and other types of streaming data). Multicasting Ethernet packets that are video packets, collaboration application packets, audio packets, and ticker data packets has the advantage of allowing multiple users to view the same data or work on the same application at the same time in real time.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Unitt et al., to combine multicasting Ethernet packets that are video packets, collaboration application packets, audio packets, and ticker data packets, as suggested by Unitt et al., with the system and method of Walton et al., Araujo et al., Owens et al., and O'Dell et al., with the motivation being to allow multiple users to view the same data or work on the same application at the same time in real time.

6. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walton et al. in view of the Applicant's admitted prior art, Araujo et al., Owens et al., and in further view of Unitt et al.

With respect to claims 22-23, the combination of Walton et al, the Applicant's admitted prior art, Araujo et al., and Owens et al. does not specifically disclose that the multicast packets are video packets and collaboration application packets.

With respect to claims 22-23, Unitt et al., in the field of communications, discloses multicast Ethernet packets that are video packets and collaboration application packets **(See page 3 paragraph 44 and page 5 paragraph 98 of Unitt et al. for reference to streaming video packets and for reference to streaming other**

types of multicast services including applications). Multicasting Ethernet packets that are video packets and collaboration application packets has the advantage of allowing multiple users to view the same video or work on the same application at the same time in real time.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Unitt et al., to combine multicasting Ethernet packets that are video packets and collaboration application packets, as suggested by Unitt et al., with the system and method of Walton et al, the Applicant's admitted prior art, Araujo et al., and Owens et al., with the motivation being to allow multiple users to view the same video or work on the same application at the same time in real time.

Allowable Subject Matter

7. Claims 28-33 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Arguments

8. Applicant's arguments filed 8/11/06 have been fully considered but they are not persuasive.

Regarding Applicant's argument with respect to the above rejections under 35 U.S.C. 112 second paragraph, the Examiner respectfully disagrees. As is pointed out in

the Applicant's Remarks section, the specification discloses in paragraph 14 a host receiving a notification of "a multicast channel (e.g. a multicast IP address)." The multicast IP address is only used as a notification or identifier of the multicast channel. A multicast address is not the same as a multicast channel. Any other use of the term "multicast IP address" to mean a "multicast channel" in the specification goes against the standard use of these terms in the art of communications. It is recommended that the claims and specification be amended to make a clear distinction between a "multicast IP address" and a "multicast channel" such that these terms are used as currently defined by one of ordinary skill in the art.

Regarding Applicant's argument that the combination of Walton, Araujo, and Owens fails to describe or suggest transmitting multicast traffic for the layer 2 multicast channel as PPPoE multicast traffic in a PPPoE multicast session to the PPPoE client, the Examiner respectfully disagrees. First, Walton et al. is used to disclose the translating of a layer 3 multicast address into a layer 2 multicast address. Although Walton et al. does equate the use of Myrinet multicasting to the use of Ethernet multicasting (See section 5.1 of Walton et al.), Walton et al. does not disclose that the layer 2 format is a PPPoE format. Araujo et al. discloses the use of PPPoE. Owens et al. discloses the use of multicasting with a point-to-point protocol. The rejections above are based on a combination of the use of multicasting with a point-to-point protocol, as disclosed by Owens et al., with the use of PPPoE, as disclosed by Araujo et al., and the translating of layer 3 multicast addresses into layer 2 multicast addresses, as disclosed by Walton et al. Therefore, to combined system and method of Walton et al., Araujo et

al., and Owens et al. is a system and method using multicasting with PPPoE where a layer 3 multicast address is translated into a layer 2 PPPoE multicast address, as claimed.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jem

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

**HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**